

What is Claimed Is:

1. A system for measuring a diameter of a limbus of an eye comprising:
an image recorder at a known location apart from the eye for recording an
illuminated limbus image;
at least a first illumination source at a first known location relative to the image recorder
for illuminating the limbus; and
a computing device connected to the image recorder for determining the diameter of the
limbus from the recorded illuminated limbus.
2. The system of claim 1 further including an output device for displaying the recorded
image and diameter of the limbus.
3. The system of claim 1 further including a fixation target associated with the image
recorder and for providing the eye with a reference target thereby preventing unwanted
eye movement.
4. The system of claim 1 wherein the image recorder is a video camera.

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5. The system of claim 1 further including:

a second illumination source at a second known location relative to the image recorder for illuminating the limbus;

a switching device connected to the first and second illumination sources for sequentially enabling the first and second illumination sources for allowing the image recorder to record at least one image illuminated by each of the first and second illumination sources; and

wherein the computing device combines at least one recorded image illuminated by the first illumination source and at least one recorded image illuminated by the second illumination source for determining the diameter of the limbus.

6. The system of claim 1 wherein the illumination source is an infrared source.

7. The system of claim 1 wherein the illumination source is a laser.

8. The system of claim 7 wherein the laser is a slit source.

9. The system of claim 8 wherein the laser is red.

10. The system of claim 1 wherein the computing device further includes an iris-angle diameter calculator for calculating a diameter of an iris-angle of the eye from the determined limbus diameter.
11. The system of claim 1 wherein the computing device further includes an intra-corneal lens (ICL) calculator for calculating a proper ICL size for the eye from the determined limbus diameter.
12. The system of claim 1 wherein the system has a fixed focus and therefore the entire system is moved relative to the eye until a focused limbus illumination is achieved.
13. The system of claim 1 wherein the image recorder is located along an optical axis of the eye.
14. The system of claim 1 wherein the image recorder includes a light filter for filtering out unwanted light frequencies thereby providing a recorded limbus having an optimal contrasting image.
15. The system of claim 1 wherein the computing device determines the limbus diameter using triangulation.

16. The system of claim 1 wherein the illumination source is placed at an angle from about 25° to about 90° from the image recorder.

17. An eye measurement system comprising:

a camera for recording an illuminated image of a limbus of an eye wherein the camera is to be placed at a known location from the eye;

first and second laser slit lamps at first and second known locations relative to the camera for illuminating the limbus;

a switch connected to the lamps for alternately enabling the first and second lamps for allowing the camera to record an image of the limbus illuminated by each of the first and second lamps; and

a computer including a frame grabber connected to the camera and switch for digitizing the illuminated limbus images and calculating one or more of a limbus diameter, an iris-angle diameter, and an inter-corneal lens size for the eye being measured.

18. The system of claim 17 further including an output device for displaying the recorded image and one or more of the calculated limbus diameter, iris-angle diameter, and the inter-corneal lens size.

19. The system of claim 17 further including a fixation target associated with the camera and for providing the eye with a reference target thereby preventing unwanted eye movement.

20. The system of claim 17 wherein the system has a fixed focus and therefore the entire system is moved relative to the eye until a focused limbus illumination is achieved.

21. The system of claim 17 wherein the image recorder is located along an optical axis of the eye.

22. The system of claim 17 wherein the image recorder includes a light filter for filtering out unwanted light frequencies thereby providing a recorded limbus having an optimal contrasting image.

23. The system of claim 17 wherein the system determines the limbus diameter using triangulation.

24. The system of claim 17 wherein the laser slit lamps are placed at an angle from about 25° to about 90° from the camera.